REMARKS/ARGUMENTS

In view of the following remarks, reexamination and reconsideration of this application, withdrawal of the rejections, and formal notification of the allowability of all claims as presented are earnestly solicited. As detailed in the Office Action mailed April 24, 2006, Claims 1-10 are pending, wherein Claims 1-10 have been rejected. In response to the Office Action, Claims 1-10 have been cancelled and new Claims 11-20 have been added to clarify the subject matter being claimed. New Claims 11-20 find support throughout the Specification and the Figures, and no new matter has been added. It is believed that the claims now define patentable subject matter over the prior art cited in the Office Action and notice to such effect is requested at the Examiner's earliest convenience.

Claim Rejections – 35 U.S.C. §112

Claims 1-10 were rejected in the Office Action as being indefinite for various reasons. In response, Claims 1-10 have been cancelled, and new Claims 11-20 have been added to clarify the subject matter being claimed. The Applicants submit that new Claims 11-20 address the indefiniteness rejections asserted in the Office Action and, as such, request withdrawal of these rejections.

Claim Rejections – 35 U.S.C. §102

Claims 1, 3-8 and 10 were rejected in the Office Action as being anticipated by International Patent Publication No. WO 00/56459 to Virving. Claims 1, 3-6, and 8 were also rejected as being anticipated by U.S. Patent No. 4,712,745 to Leith. Though the Applicants traverse these rejections, Claims 1-10 have been cancelled and new Claims 11-20 have been added to clarify the subject matter being claimed.

More particularly, Claim 11, upon which Claims 12-20 depend, corresponds to cancelled Claim 1 and recites a refining surface of a refiner, wherein the refiner includes two opposed refining surfaces coaxially-disposed along an axis, with at least one of the refining surfaces being

configured to rotate about the axis in a rotation direction, further wherein the refining surfaces are configured to receive a lignocellulose material therebetween for defibering thereof. Such a refining surface comprises a plurality of radially-extending bars defining grooves between adjacent bars, with each bar having a radially-extending length and an angularly-extending width. **At least one of the bars includes a bevel extending from a leading edge of the bar**, wherein the leading edge is defined with respect to the interaction of the bevel with the opposed refining surface. **The bevel extends across the bar for less than the entire width thereof**. The remainder of the width of the bar is substantially parallel to the refining surface. The leading edge of the bevel is further configured such that, as an opposed bar of the opposed refining surface approaches axial coincidence with the bevel, an increasing force is generated substantially perpendicularly to the refining surface and axially outward with respect to the opposed refining surfaces. As disclosed in the Specification, for example paragraphs [0014] and [0024], the bevel about the leading edge of the bar helps to create a force between the refining surfaces that urges the refining surfaces apart. Because of the axially outward force, the refining surfaces will not contact each other, and thus will reduce the wear experienced by the refining surfaces during the defibering process.

FIGS. 2-5 of the Virving '459 reference, including FIG. 3 as cited in the Office Action, show **axial views of various embodiments of a bar of a refining segment (FIG. 1) for a refiner, with the axial views showing the bar extending in the radial direction of the refining segment**. FIGS. 6 and 7 further illustrate cross-sectional views of the bars shown in FIGS. 2-5. That is, each of the bars 11 of the refining element 10 have upper surfaces 13 and edges 14, wherein FIGS. 2-5 indicate that plan views (i.e., looking at the top surfaces 13 of the respective bars 11) of the bars 11 are provided. Each of FIGS. 2-5 is disclosed by the Virving '459 reference as defining **steps 17, 20, 21, 22, 23 extending along the respective bar 11 in the radial direction**. The steps 17, 20, 21, 22, 23 are configured to be concave in cross-section, as shown in FIGS. 6 and 7. As such, the Virving '459 reference **does not** teach or suggest a refining surface comprising a plurality of radially-extending bars defining grooves between adjacent bars, wherein **at least one of the bars includes a bevel extending from a leading edge of the bar, and the bevel extends across the bar for less than the entire width thereof** (with

the remainder of the width of the bar being substantially parallel to the refining surface), further wherein the leading edge of the bevel is configured such that, as an opposed bar of the opposed refining surface approaches axial coincidence with the bevel, an increasing force is generated substantially perpendicularly to the refining surface and axially outward with respect to the opposed refining surfaces.

Section C-C of FIG. IV of the Leith '745 patent, as also cited in the Office Action, shows bars of a refiner plate having an inclined axially-outward surface where **the incline extends across the entire width of each bar**. That is, the radial bar 23 and slot 24 profile of a refiner plate segment 3 includes radial bars 23a each having a leading edge 26, a top surface 27, and two substantially vertical side surfaces 28. The leading edge 26 is the edge of the top surface 27 in the direction of the relative counter-movement or rotation of discs 1 and 10. The top surface 27 is preferably slope downward at an angle A towards the leading edge, wherein the angle A is small and on the order of about 6 degrees. As such, the Leith '745 patent **does not** teach or suggest a refining surface comprising a plurality of radially-extending bars defining grooves between adjacent bars, wherein **at least one of the bars includes a bevel extending from a leading edge of the bar, and the bevel extends across the bar for less than the entire width thereof** (with the remainder of the width of the bar being substantially parallel to the refining surface), further wherein the leading edge of the bevel is configured such that, as an opposed bar of the opposed refining surface approaches axial coincidence with the bevel, an increasing force is generated substantially perpendicularly to the refining surface and axially outward with respect to the opposed refining surfaces.

As stated by MPEP §2131, "to anticipate a claim, the reference must teach every element of the claim." That is, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). In this instance, neither of the Virving '459 and the Leith '745 references teaches or suggests a refining surface comprising a plurality of radially-extending bars defining grooves between adjacent bars, wherein **at least one of the bars includes a bevel extending from a leading edge of the bar, and the bevel extends across the bar for less than the entire width**

thereof (with the remainder of the width of the bar being substantially parallel to the refining surface), further wherein the leading edge of the bevel is configured such that, as an opposed bar of the opposed refining surface approaches axial coincidence with the bevel, an increasing force is generated substantially perpendicularly to the refining surface and axially outward with respect to the opposed refining surfaces, as particularly claimed in new Claim 11 of the present invention. Thus, in light of this distinction between the Virving '459 and Leith '745 references, and Claim 11 now pending, the Applicants submit that new Claim 11 is not anticipated by, and is therefore patentable over, the Virving '459 and Leith '745 references. Accordingly, the Applicants respectfully request withdrawal of these rejections.

Claim Rejections – 35 U.S.C. §103

Claims 2 and 9 were rejected as being obvious over the Virving '459 reference, while Claims 2, 7, and 9 were rejected as being obvious over the Leith '745 patent. As previously discussed, Claims 1-10 have been cancelled and new Claims 11-20 have been added. Further, new Claim 11, corresponding to cancelled Claim 1, is **not anticipated** by either of the Virving '459 and Leith '745 references. As such, the Applicants submit that Claims 12, 17, and 19, which correspond to cancelled Claims 2, 7, and 9 and depend either directly or indirectly from Claim 11, are patentable over the Virving '459 and Leith '745 references cited in the Office Action. As such, the Applicants respectfully request withdrawal of these rejections.

Conclusion

In summary, the Virving '459 reference and the Leith '745 patent, either separately or in combination, **do not** teach or suggest the embodiments of the present invention, as now claimed in Claims 11-20. Accordingly, in view of these differences between the Applicants' invention and the Virving '459 and Leith '745 references, it is submitted that the present invention, as defined by the pending claims, is patentable over the prior art cited in the Office Action. As such, Claims 11-20 are believed to be in condition for immediate allowance.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

/kevin r. lyn/

Kevin R. Lyn
Registration No. 42,818

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Raleigh Office (919) 862-2200
Fax Raleigh Office (919) 862-2260

ELECTRONICALLY FILED USING THE EFS-WEB ELECTRONIC FILING SYSTEM OF THE UNITED STATES PATENT & TRADEMARK OFFICE ON JUNE 30, 2006.